# SDR6000

## High performance cost-optimized RF System-On-Module

Production ready hardware module with open source software for system prototyping and industry standard platforms.

The SDR6000 is a customisable RF system-on-module platform offering wide bandwidth and tuning range for a broad range of Software Defined Radio applications. It contains a wideband ADRV9002 dual channel transceiver and a Zynq® System-On-Chip offering ARM® Cortex™ A9 MPCore™ with NEON™ FPU and a power-optimized programmable logic.

1GB DDR3 is dedicated to the Processor System, and a 128Mb Flash memory is provided for image storage. A high capacity SD-card additional boot option is available, giving much flexibility for developing custom applications.

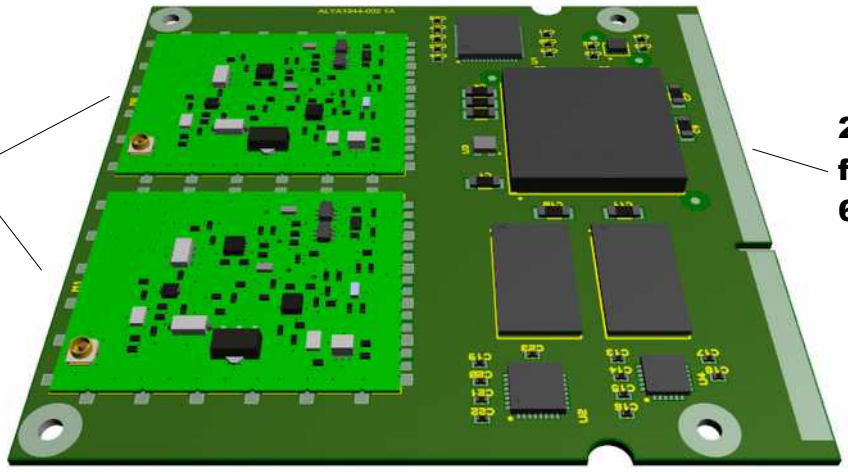
Designed for scalability, multiple SDR6000's can be synchronized enabling a solution for multi stream applications ensuring end to end deterministic latency.

To achieve high level analog performance, the SDR6000 offers customizable front-end top-modules. Two distinct front-ends can be implanted for full dual frequency operation, or a double-sized top-module can be choosen for single channel applications.

The SDR6000 has extensive I/O capability. Combined with the carrier board a variety of high speed I/O can be used, including Gigabit Ethernet, USB2 OTG, and SERDES/SGMII fiber optics interface.

An evaluation kit including a generic carrier board is also available. A design can easily be evaluated and then integrated seamlessly into a custom carrier for further prototyping, or a final product greatly accelerating time to market.

**Customizable analog front-end top-modules**



**204 pin SO-DIMM form factor 67x72mm**

- Tuning range 30MHz – 6GHz
- Tx/Rx bandwidth 12kHz - 40MHz
- Low Power Monitor/Sleep modes
- Dual Tx and dual Rx for FDD and TDD operation
- Internal TCXO or external reference input operation
- Support for Linux I/O applications
- Support for GNU Radio and streaming interfaces for custom applications
- Open source reference designs to allow zero-day development proof of concept

# Applications

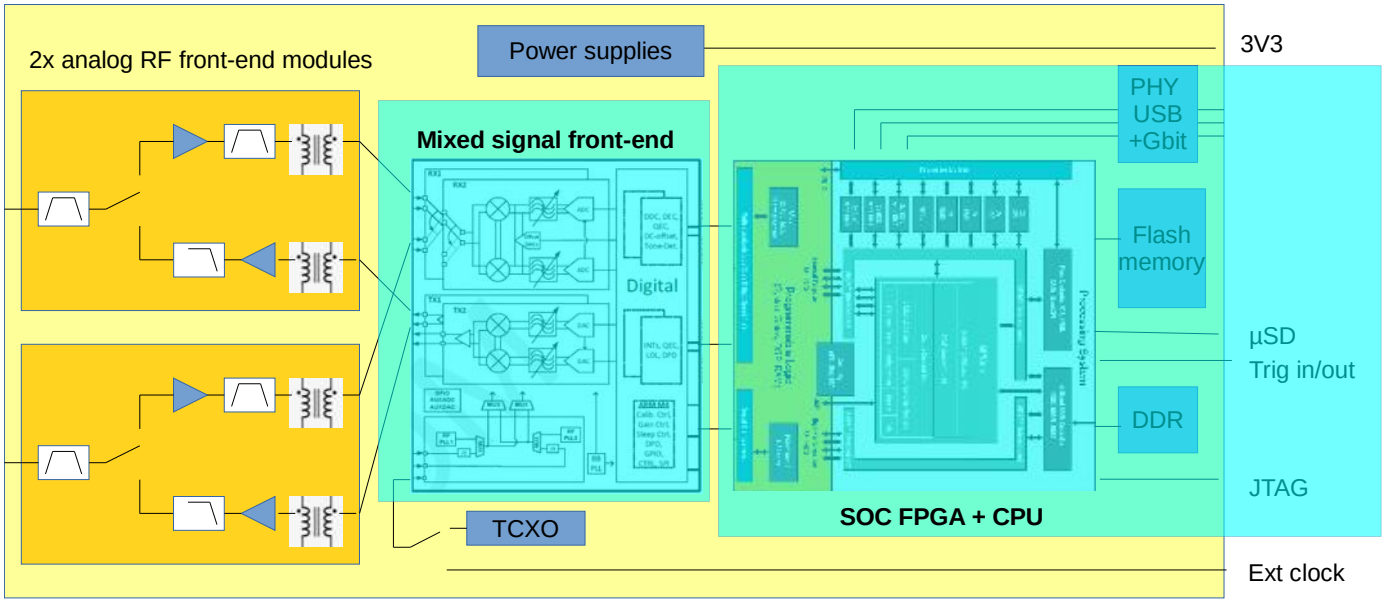
- IOT gateways
- Massive MIMO
- Long range communications
- Portable test equipment
- Digital radio links
- Active antennas
- Cognitive radio
- Wireless networking
- Spectrum monitoring

## Specifications

| Specifications | Typical |
|---|---|
| *Power* | |
| DC input | Single 3,3V |
| *RF performance* | |
| Tuning range | 30MHz-6000MHz |
| Receiver BW | up to 40MHz |
| Transmitter BW | up to 40MHz |
| Number of transceivers | 2 per SD6000 module – Muti-module synchronization option |
| Operation mode | TDD or FDD |
| *Mechanical* | |
| Dimensions | 67,6mm x 72,4mm x 7mm |
| Socket | 204pin SO-DIMM form factor |

| Specifications | Typical |
|---|---|
| *Digital* | |
| I/O options | Gigabit Ethernet, USB 2 OTG, SERDES/SGMII, UART, I2C, 4x LVDS high speed, multiple GPIO |
| Core | Dual-core ARM® Cortex™ A9 MPCore™ with NEON™ FPU engine |
| Security | AES & SHA256b decryption & Authentication |
| DDR3 | 1GB |
| FPGA logic cells | 85k |
| DSP slices | 220 |
| PL block RAM | 4,9Mb |
| SD/µSD | Removeable SD option |
| Flash | QSPI 128Mb |

## Hardware architecture




## SDR6000 evaluation

The SDR6000 is a customisable hardware platform designed for integration on final product. It is also a great prototyping and evaluation tool.

The Evaluation Carrier Board will give all the needed flexibility in connecting to various IO options for prototyping your application through a standardized mechanical interface.

With an open-source design, ECB is the perfect takeoff for your custom carrier board developement.

Alciom's technology experts can help you to get your design faster : dedicated digital signal processing applications, front-end design…

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